Use of Computer-Generated ECG Reports by Residents and Faculty+

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Despite the fact that physicians often have information needs that go unanswered and that diagnostic decision support systems could conceivably answer some of those needs, these decision support systems are still not widely used. Presumably, when these systems are easily accessible and have documented the accuracy of the data produced, physicians will use them to support their decision making.

The computer-generated electrocardiogram interpretation programs are diagnostic decision support systems that meet the criteria of accessibility and documentation of accuracy.[1-2] We conducted a survey to determine how physicians utilize the ECG interpretations that they routinely receive.

METHODS/RESULTS

The ECG program is the 12SL™ ECG Analysis Program produced by Marquette Electronics, Inc. The subjects were 110 Medicine residents, 25 Cardiology fellows, 28 General Medicine faculty, and 30 Cardiology faculty. A questionnaire was administered which consisted of three questions, with respondents instructed to select one response for each question. The first question addressed how the respondents used the computer-generated ECG interpretation report. The second question asked the respondent to estimate the percentage of patients in which the ECG interpretation is sufficiently accurate for good patient care. The third question addressed whether the respondent had read studies evaluating the accuracy of the ECG interpretation programs.

The overall response rate to the survey was 90%. The data show that 83% of all respondents stated that they used the program at least some of the time, with no significant differences between respondent groups. Perceived accuracy varied a great deal, but the distributions were significantly different between those who tended to use and those who rarely or never used the interpretations ($X^2=37.90$, $p<.0001$).

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The most striking difference was that all of the individuals who said they rarely or never look at the interpretations estimated the accuracy of the interpretation to be less than 80%, whereas almost half of those who utilized the reports perceived them to be accurate for at least 80% of their patients. There were no significant differences in use of the ECG interpretation reports between those who read the literature and those who were not familiar with it ($X^2=.01$, $p=.92$). Only 16% of all respondents read any literature on the programs.

CONCLUSION

It appears that most respondents will at least look at the data if they are available and, for the ECG data, utilization practices are similar for residents, fellows and faculty. Few physicians read the research data on the accuracy of the systems, but knowledge of these data is not necessary for them to use the system's reports. Those who do not utilize the interpretation report perceive the reports as less accurate than those who use the data. If these data are reflective of physicians' responses to a fairly mature diagnostic decision support system, they support the notion that a continual effort to improve the accuracy of decision support systems is very important, since if these systems are available, they will be used for a second opinion, and sometimes, as an expert consultant.

REFERENCES

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